

Appln No. 10/542,392
Amdt date November 20, 2009
Reply to Office action of August 20, 2009

REMARKS/ARGUMENTS

Claims 1-8 and 10-13 are pending in the application. With this amendment, claims 2, 3, 4-6, 7, and 12-13 are amended for grammar, clarity and definiteness, and no new matter has been added. Applicants have amended the specification as indicated. This amendment is supported by the specification as originally filed at page 21, lines 21 to 24 and page 22, lines 22-30.

35 U.S.C. 112

In the Office Action of August 20, 2009, claims 4, 12 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. In response, Applicants have amended claims 4 and 6 to recite "peeling strength" and claims 12 and 13 to delete the word "film". Applicants submit that as amended herein, claims 4, 6, 12, and 13 are clearly supported by the specification, and withdrawal of this rejection is respectfully requested.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite. In response, Applicants have amended claim 5 to define the acronym JIS as Japanese Industrial Standard, thereby providing meaning and definiteness to this term. Applicants submit that as amended herein, claim 5 is definite, and withdrawal of the rejection is respectfully requested.

35 U.S.C. 103(a)

Claims 1-4, 7, 8, and 10-13 are rejected as unpatentable over Tonkin (U.S. 6,615,537) in view of Wright (EP Application No. 0 268 556). In making this rejection, the Examiner states that "Wright teaches water containing fertilizer that contacts a plant through hydrophilic film" and that "it would have been obvious to one of ordinary skill in the art at the time of the invention to add fertilizer to the water of Tonkin as taught by Wright as to provide a nutrient rich medium to the plants" (Office Action, item 9, page 3). Applicants respectfully traverse this rejection as follows.

Tonkin discloses a non-porous hydrophilic film in contact with water and capable of passing water vapor. Tonkin specifically teaches hydrophilic polymers as the non-porous hydrophilic film, which are discussed at col. 1, lines 59-62-- "*Numerous materials allow the passage of water whilst restricting the passage of suspended or even dissolved materials. . .*"

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Wright discloses a plant-cultivating method using a system comprising a porous hydrophobic film and an aqueous fertilizer solution that passes through this film. However, nowhere does Wright disclose an aqueous fertilizer solution that contacts a plant through a non-porous hydrophilic film, as recited in independent claims 1 and 7. In contrast to the Examiner's presumption, one skilled in the art would understand that the dissolved fertilizer solution of Wright would pass through the porous film of Wright, but would not expect the dissolved fertilizer to pass through the non-porous film of Tonkin because it would not be expected to pass through a non-porous film, and furthermore, because Tonkin teaches that it would not at col. 1, lines 59-62. Therefore, one skilled in the art would not apply Wright to Tonkin as the Examiner has presumed. Accordingly, Applicants submit that the rejection of claims 1-4, 7, 8 and 10-13 as unpatentable over Tonkin in view of Wright is improper. See *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness"). Applicants submit that independent claims 1 and 7, and all claims depending therefrom, including claims 2-4, 8 and 10-13, are patentable over Tonkin in view of Wright.

Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as unpatentable over Mori (EP 1 203 525) in view of Wright. In making this rejection, the Examiner states that, "It would have been obvious to one of ordinary skill in the art at the time of the invention to add the fertilizer to the water of Mori as taught by Wright to provide a nutrient rich medium to the plants, " (Office Action, item 20, page 6). Applicants respectfully traverse this rejection as follows.

Mori discloses a non-porous vapor-permeable material (paragraph 0042), that is in contact with water and passes water vapor (paragraph 0051), and does not pass other substances (e.g. salt from sea water, calcium or magnesium from hard water, etc) in the water (paragraph 0074). As discussed above, Wright discloses a plant-cultivating method using a system comprising a porous hydrophobic film, and a dissolved fertilizer solution that passes through this film. Applying the same reasoning as submitted above for Tonkin, Applicants submit that

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one skilled in the art would not apply the dissolved fertilizer solution of Wright to the non-porous vapor-permeable film of Mori because one skilled in the art would not expect the dissolved fertilizer ions to pass through the *non-porous* film as is taught by Mori at paragraph 0074. As such, Mori teaches *away* from an effect conferred by any substance dissolved in the water, and therefore, the dissolved fertilizer of Wright would not be combined with Mori to arrive at the invention recited in independent claim 1.

With respect to independent claim 6, the Examiner further argues that "Mori and Wright is used to teach the film being substantially integrated with the root of the plant body, not the film being able to allow water containing fertilizer to contact a plant body. It is also unknown what the affidavit is attempting to prove." (See Office Action, item 25, page 8.) Applicants submit that neither Mori nor Wright teaches film integration with the root of the plant body. Furthermore, the Declaration under 37 CFR 1.132 by Dr. Yoshioka discusses and shows that a non-porous film alone, without fertilizer, as taught by Tonkin and Mori, will not produce film integration with the roots of the plant body (see results of Experiment 1A); and that a porous film with fertilizer, as taught by Wright, will not produce film integration with the roots of the plant body (see results of Experiment 1B). In contrast, the present invention for the first time, shows that a non-porous hydrophilic film can pass ions therethrough, and that, when a plant is cultivated using the plant-cultivating system of the present invention which comprises a non-porous hydrophilic film, the plant roots unexpectedly integrate with the non-porous hydrophilic film, and the plant having its roots integrated with the non-porous hydrophilic film exhibits surprisingly enhanced growth and improved peeling strength, even without providing a fertilizer-containing soil on the film. Accordingly, Applicants submit that independent claims 1 and 6, and all claims depending therefrom, including claim 5, are patentable over Mori in view of Wright.

Conclusion

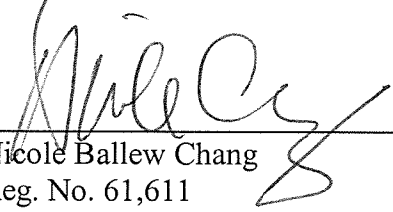
For the foregoing reasons, Applicants respectfully submit that all claims pending in the application are patentable over the art. A notice of allowance is respectfully requested.

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However, if there are any remaining issues that can be addressed by telephone, Applicants invite the Examiner to contact Applicants' counsel at the number indicated below.

Respectfully submitted,
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